- N,N-Dimethylmethanamine, (Trimethylamine); C<sub>3</sub>H<sub>9</sub>N; [75-50-3]
- 2. Acetonitrile; C<sub>2</sub>H<sub>3</sub>N; [75-05-8]

ORIGINAL MEASUREMENTS:

Halban, H.

Z. Phys. Chem.

1913, 84, 129-159.

**VARIABLES:** 

Concentration

PREPARED BY:

P. G. T. Fogg

#### EXPERIMENTAL VALUES:

T/K	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/mol dm	PC3H9N/wwHd	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/ concentration in gas phase	Mole fraction in solution* $^{x}$ C <sub>3</sub> H <sub>9</sub> N
298.2	0.1200	35.3	63.2	0.0063
	0.1260	37.0	63.2	0.0066
	0.1620	46.7	64.3	0.0085

\* Calculated by the compiler, using the density of the solvent given in ref. (1), on the assumption that dissolution of gas caused negligible change of volume of the liquid phase.

### AUXILIARY INFORMATION

# METHOD /APPARATUS / PROCEDURE:

through the solution.

The partial pressures of trimethylamine above solutions of concentrations determined by titration, were measured by a dynamic method (refs. (2) & (3). Mixtures of hydrogen and oxygen, produced by electrolysis of sodium hydroxide solution, were passed through each solution of trimethylamine. The trimethylamine in the gas stream was absorbed in hydrochloric acid and estimated from changes in electrical conductivity due to partial neutralisation of the The volumes of hydrogen/ acid. oxygen gas mixture produced by electrolysis were found from the barometric pressure and changes in a copper voltameter in series with the cell for producing the gas. partial pressures of trimethylamine were calculated on the assumption that equilibrium was established between trimethylamine in solution and that in the gas phase, during passage of hydrogen/oxygen mixture

### SOURCE AND PURITY OF MATERIALS:

- Hydrated chloride from Kahlbaum; reacted with KOH; gas dried with NaOH.
- Kahlbaum; dried over K<sub>2</sub>SO<sub>4</sub>;
   b.p. 81.0-81.2 C.

ESTIMATED ERROR:

- 1. Dreisbach, R.R. Physical Properties of Chemical Compounds, Vol. 3, A.C.S., Washington. 1961.
- 2. Gaus, Z. Anorg. Chem. 1900, 25, 236.
- 3. Abegg, R.; Riesenfeld, H. Z. Phys. Chem. 1902, 40, 84.

- 1. N, N-Dimethylmethanamine. (Trimethylamine); C3HaN; [75-50-3]
- 2. Nitromethane; CH<sub>3</sub>NO<sub>2</sub>; [75-52-5]

ORIGINAL MEASUREMENTS:

Halban, H.

Z. Phys. Chem.

1913, 84, 129-159.

VARIABLES:

Concentration

PREPARED BY:

P. G. T. Fogg

### EXPERIMENTAL VALUES:

т/к	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/	pc3H9N/wwHd	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/ concentration in gas phase	Mole fraction in solution* ${}^x{\rm C_3^{\rm H_9^{\rm N}}}$
298.2	0.1070	35.4	56.0	0.0057
	0.1272	42.1	56.0	0.0068
ľ	0.1419	46.8	56.5	0.0076
} {	0.1741	56.4	57.5	0.0093

\* Calculated by the compiler, using the density of the solvent given in ref. (1), on the assumption that dissolution of gas caused negligible change of volume of the liquid phase.

### AUXILIARY INFORMATION

# METHOD /APPARATUS / PROCEDURE:

The partial pressures of trimethylamine above solutions of concentrations determined by titration, were measured by a dynamic method (refs. (2) & (3)). Mixtures of hydrogen and oxygen, produced by electrolysis of sodium hydroxide solution, were passed through each solution of trimethylamine. The trimethylamine in the gas stream was absorbed in hydrochloric acid and estimated from changes in electrical conductivity due to partial neutralisation of the acid. The volumes of hydrogen/ oxygen gas mixture produced by electrolysis were found from the barometric pressure and changes in a copper voltameter in series with the cell for producing the gas. The partial pressures of trimethylamine were calculated on the assumption that equilibrium was established between trimethylamine in solution and that in the gas phase, during passage of hydrogen/oxygen mixture through the solution.

### SOURCE AND PURITY OF MATERIALS:

- 1. Hydrated chloride from Kahlbaum; reacted with KOH; gas dried with NaOH.
- 2. Prepared according to ref. (4); dried over potassium carbonate; b.p. 100.6 C (751 mmHg).

- 1. Timmermans, J. Physico-Chemical Constants of Pure Organic Compounds Vol. 2, Elsevier, Amsterdam. 1965
- 2. Gaus Z. Anorg. Chem. 1900, 25, 236.
- Abegg, R.; Riesenfeld, H. Z. Phys. Chem. 1902, 40, 84.
   Steinkopf, W.; Kirchhoff, G. Ber.
- Dtsch. Chem. Ges. 1909, 42, 3438.

		N,N-Dimethy	methanamine	209
COMPONENTS:			ORIGINAL MEASUREMENTS:	
1. N,N-Dimethylmethanamine			Gerrard, W.	
(trimethylamine); C <sub>3</sub> H <sub>9</sub> N; [75-50-3]			Solubility of Gases and Liquids,	
2. N,N-D: [68-1:	imethylformami 2-2]	de; C <sub>3</sub> H <sub>7</sub> NO;	Plenum 1976, Chapter 10.	
VARIABLES:			PREPARED BY:	
	Temperature, p	ressure	C. L. Young	
			C. 11. 10m/g	
EXPERIMENT/	AL VALUES:		Mole fraction of trimethylamine	∋
T/K	P/mmHg	<i>P</i> /10 <sup>5</sup> Pa	in liquid, <sup>x</sup> (CH <sub>3</sub> ) <sub>3</sub> N	
278.15	100	0.133	0.028	
	200	0.267	0.072	
]	300 400	0.400 0.533	0.128 0.202	
	500	0.553	0.202	
	600	0.800	0.442	
	700	0.933	0.700	
283.15	760 100	1.013 0.133	0.880	
203.13	200	0.133	0.024 0.060	
ł	300	0.400	0.098	
	400	0.533	0.145	
	500 600	0.667	0.205	
	700	0.800 0.933	0.288 0.410	
	760	1.013	0.511	
298.15	100	0.133	0.017	
	200 300	0.267	0.037	
	400	0.400 0.533	0.060 0.084	
	500	0.667	0.106	
	600	0.800	0.132	
	700 760	0.933	0.165	
	760	1.013	0.191	
		AUXILIARY	INFORMATION ·-	
METHOD/APPA	ARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
of pure 1	iquid in a bul	a known weight obler tube at a	1. British Drug Houses or Cambria Gases sample.	n
total pre		d by a manometer	2. Purified and attested by	
	stimated by we		conventional procedures.	
	re was manual		į.	
to within	0.2K.			
	atus and proce			
aescribed	by Gerrard []	L. 2].		
			ESTIMATED ERROR:	
			$\delta T/K = \pm 0.1;  \delta x/x = \pm 3\%$	
			(estimated by compiler)	
			REFERENCES:	
			1. Gerrard, W. J. Appl. Chem. Biotechnol. 1972, 22 623-650.	
			2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976.	
			Chapter 1.	

ard, W. wility of Gases and Liquids, um 1976, Chapter 10.
•
BY:
D

EXPERIMENTAL VALUES:

т/к	P/mmHg	<i>P/</i> 10 <sup>5</sup> Pa	Mol	in	of trimethylamine liquid, (CH <sub>3</sub> ) <sub>3</sub> N
		Pyridine;	C <sub>5</sub> H <sub>5</sub> N;	[110-86-1]	
283.15	700 760	0.933 1.013			0.65 0.70
		Quinoline;	C <sub>9</sub> H <sub>7</sub> N;	[91-22-5]	
283.15	100 200 300 400 500 600 700 760	0.133 0.267 0.400 0.533 0.667 0.800 0.933 1.013			0.051 0.112 0.179 0.248 0.321 0.413 0.545 0.648

### AUXILIARY INFORMATION

# METHOD/APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

### SOURCE AND PURITY OF MATERIALS:

- 1. British Drug Houses or Cambrian Gases sample.
- 2. Purified and attested by conventional procedures.

ESTIMATED ERROR:

 $\delta T/K = \frac{+}{0.1}; \quad \delta x/x = \frac{+}{3}$ 

(estimated by compiler)

- Gerrard, W.
   Appl. Chem. Biotechnol. <u>1972</u>, 22 623-650.
- 2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

#### N,N-Dimethylmethanamine 211 COMPONENTS: ORIGINAL MEASUREMENTS: 1. N, N-Methylmethanamine Gerrard, W. (trimethylamine); C3H9N; [75-50-3] Solubility of Gases and Liquids, Nitrobenzene; C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>; Plenum 1976, Chapter 10. [98-95-3] VARIABLES: PREPARED BY: C. L. Young Temperature, pressure EXPERIMENTAL VALUES: Mole fraction of trimethylamine in liquid, P/10 Pa P/mmHq T/K $^{x}$ (CH<sub>3</sub>)<sub>3</sub>N 0.133 0.060 100 283.15 0.119 200 0.267 300 0.400 0.184 400 0.533 0.260 500 0.356 0.667 0.464 600 0.800 0.595 700 0.933 760 1.013 0.694 100 0.032 298.15 0.133 0.070 200 0.267 0.110 300 0.400

# AUXILIARY INFORMATION .-

0.533

0.667

0.800

0.933

1.013

# METHOD/APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of abosrbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

400 500

600 700

760

### SOURCE AND PURITY OF MATERIALS:

1. British Drug Houses or Cambrian Gases sample.

0.151

0.196 0.243

0.293 0.326

Purified and attested by conventional procedures.

ESTIMATED ERROR:  $\delta T/K = \pm 0.1; \quad \delta x/x = \pm 3\%$ (estimated by compiler)

- 1. Gerrard, W.
- J. Appl. Chem. Biotechnol. 1972, 22 623-650.
- Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

- 1. N, N-Dimethylmethanamine, (Trimethylamine); C3HoN; [75-50-3]
- 2. Nitrobenzene ; C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>; [98-95-3]

ORIGINAL MEASUREMENTS:

Halban, H.

Z. Phys. Chem.

1913, 84, 129-159.

VARIABLES:

Concentration

PREPARED BY:

P. G. T. Fogg

EXPERIMENTAL VALUES:

T/K	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/mol dm	$p_{\mathrm{C_3H_9N}/\mathrm{mmHg}}$	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/concentration in gas phase	Mole fraction in solution* ${}^xC_3^{H_9}N$
298.2	0.180	63.3	52.8	0.0182
	0.236	81.7	53.7	0.0237
	0.268	94.5	52.7	0.0268

\* Calculated by the compiler, using the density of the solvent given in ref. (1), on the assumption that dissolution of gas caused negligible change of volume of the liquid phase.

### AUXILIARY INFORMATION

## METHOD/APPARATUS/PROCEDURE:

The partial pressures of trimethylamine above solutions of concentrations determined by titration, were measured by a dynamic method (refs. (2) & (3). Mixtures of hydrogen and oxygen, produced by electrolysis of sodium hydroxide solution, were passed through each solution of trimethylamine. The trimethylamine in the gas stream was absorbed in hydrochloric acid and estimated from changes in electrical conductivity due to partial neutralisation of the The volumes of hydrogen/ acid. oxygen gas mixture produced by electrolysis were found from the barometric pressure and changes in a copper voltameter in series with the cell for producing the gas. partial pressures of trimethylamine were calculated on the assumption that equilibrium was established between trimethylamine in solution and that in the gas phase, during passage of hydrogen/oxygen mixture through the solution.

## SOURCE AND PURITY OF MATERIALS:

- 1. Hydrated chloride from Kahlbaum; reacted with KOH; gas dried with NaOH.
- 2. Kahlbaum aus krist. Benzol; dried before use.

ESTIMATED ERROR:

- 1. Dreisbach, R.R. Physical Properties of Chemical Compounds, Vol. 1, A.C.S. Washington. 1955.
- Z. Anorg. Chem. 1900, 25, 2. Gaus, 236.
- 3. Abegg, R.; Riesenfeld, H. Z. Phys. Chem. 1902, 40, 84.

- 1. N.N-Dimethylmethanamine (trimethylamine); C3H9N; [75-50-3]
- Benzenamine (Aniline); C<sub>6</sub>H<sub>7</sub>N; [62-53-3]

### ORIGINAL MEASUREMENTS:

Gerrard, W.

Solubility of Gases and Liquids,

Plenum 1976, Chapter 10.

VARIABLES:

PREPARED BY:

Pressure

C. L. Young

### EXPERIMENTAL VALUES:

T/K	P/mmHg	<i>P/</i> 10 <sup>5</sup> Pa	Mole fraction of trimethylamine in liquid,  **CH3)3N
283.15	100 200 300 400 500 600 700	0.133 0.267 0.400 0.533 0.667 0.800 0.933 1.013	0.111 0.217 0.327 0.432 0.531 0.626 0.720 0.775

### AUXILIARY INFORMATION

### METHOD /APPARATUS / PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

# SOURCE AND PURITY OF MATERIALS:

- 1. British Drug Houses or Cambrian Gases sample.
- 2. Purified and attested by conventional procedures.

# ESTIMATED ERROR:

 $\delta T/K = \frac{+}{0.1}; \quad \delta x/x = \frac{+}{3}$ (estimated by compiler)

# REFERENCES:

- Gerrard, W.
   Appl. Chem. Biotechnol. 1972, 22 623-650.
- 2. Gerrard, W.

Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

- N,N-Dimethylmethanamine (trimethylamine); C<sub>3</sub>H<sub>9</sub>N; [75-50-3]
- 2. N-Methylbenzenamine; C<sub>7</sub>H<sub>9</sub>N;
  [100-61-8]

ORIGINAL MEASUREMENTS:

Gerrard, W.

Solubility of Gases and Liquids, Plenum,  $\frac{1976}{10}$ , Chapter  $\frac{10}{10}$ .

VARIABLES:

PREPARED BY:

C. L. Young

Pressure

XPERIMENTAL VA	LUES:		Mole fraction of N,N-dimethylmethanamine
т/к	P/mmHg	P/10 <sup>5</sup> Pa	in liquid,  **C3H9N
283.15	100	0.133	0.060
	200	0.267	0.128
	300	0.400	0.203
	400	0.533	0.284
	500	0.667	0.380
	600	0.800	0.492
	700	0.933	0.640
	760	1.013	0.732

# AUXILIARY INFORMATION

# METHOD APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K. The apparatus and procedure are described by Gerrard (1,2).

# SOURCE AND PURITY OF MATERIALS:

- 1. British Drug Houses or Cambrian Gases sample.
- Purified and attested by conventional procedures.

### ESTIMATED ERROR:

 $\delta T/K = \pm 0.1$ ;  $\delta x/x = \pm 3\%$  (estimated by compiler).

- Gerrard, W.
   J. Appl. Chem. Biotechnol.
   1972, 22, 623-650.
- 2. Gerrard, W.
  Solubility of Gases and Liquids,
  Plenum Press, New York. 1976,
  Chapter 1.

- N, N-Dimethylmethanamine, (trimethylamine); C3H9N; [75-50-3]
- 2. Benzonitrile; C<sub>7</sub>H<sub>5</sub>N; [100-47-0]

ORIGINAL MEASUREMENTS:

Gerrard, W.

Solubility of Gases and Liquids,

Plenum 1976, Chapter 10.

VARIABLES:

PREPARED BY:

Pressure

C. L. Young

### EXPERIMENTAL VALUES:

т/к	P/mmHg	<i>P</i> /10 <sup>5</sup> Pa	Mole fraction of trimethylamine in liquid,  **(CH3)3N
283.15	100	0.133	0.067
	200	0.267	0.140
	300	0.400	0.217
	400	0.533	0.302
	500	0.667	0.400
	600	0.800	0.507
	700	0.933	0.640
	760	1.013	0.720

# AUXILIARY INFORMATION

### METHOD/APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K. The apparatus and procedure are described by Gerrard [1,2].

- SOURCE AND PURITY OF MATERIALS:
- 1. British Drug Houses or Cambrian Gases sample.
- 2. Purified and attested by conventional procedures.

# ESTIMATED ERROR:

 $\delta T/K = \pm 0.1; \quad \delta x/x = \pm 3$ (estimated by compiler)

### REFERENCES:

- Gerrard, W.
   Appl. Chem. Biotechnol. 1972, 22 623-650.
- 2. Gerrard, W.

Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

1.	<pre>N, N-Dimethylmethanamine,   (Trimethylamine); C<sub>3</sub>H<sub>9</sub>N;   [75-50-3]</pre>

1-Methyl-2-nitrobenzene; C7H7NO2; [88-72-2]

ORIGINAL MEASUREMENTS:

Halban, H.

Z. Phys. Chem. 1913, 84, 129-159.

**VARIABLES:** 

COMPONENTS:

Concentration

PREPARED BY:

P. G. T. Fogg

#### EXPERIMENTAL VALUES:

т/к	Concentration of C3H9N in solution/mol dm	PC3H9N/mmHg	Concentration of C <sub>3</sub> H <sub>9</sub> N in solution/concentration in gas phase	Mole fraction in solution* ${}^{x}C_{3}^{H_{9}N}$
298.2	0.250	86.6	53.7	0.0286
	0.256	85.2	55.8	0.0293

\* Calculated by the compiler, using the density of the solvent given in ref. (1), on the assumption that dissolution of gas caused negligible change of volume of the liquid phase.

# AUXILIARY INFORMATION

# METHOD /APPARATUS / PROCEDURE:

The partial pressures of trimethylamine above solutions of concentrations determined by titration, were measured by a dynamic method (refs. Mixtures of hydrogen and (2) & (3). oxygen, produced by electrolysis of sodium hydroxide solution, were passed through each solution of The trimethylamine trimethylamine. in the gas stream was absorbed in hydrochloric acid and estimated from changes in electrical conductivity due to partial neutralisation of the acid. The volumes of hydrogen/ oxygen gas mixture produced by electrolysis were found from the barometric pressure and changes in a copper voltameter in series with the cell for producing the gas. The partial pressures of trimethylamine were calculated on the assumption that equilibrium was established between trimethylamine in solution and that in the gas phase, during passage of hydrogen/oxygen mixture through the solution.

# SOURCE AND PURITY OF MATERIALS:

- 1. Hydrated chloride from Kahlbaum; reacted with KOH; gas dried with NaOH.
- 2. Supplied by Kahlbaum; purified by method given in ref. (4); dried over calcium chloride.

ESTIMATED ERROR:

- RLFERENCES: 1. Lange's Handbook of Chem. (12th ed)
- McGraw-Hill, New York, 1979. Gaus, Z. Anorg. Chem. 1900 2. Gaus, 25, 236.
- 3. Abegg, R.; Riesenfeld, H. Z. Phys. Chem. 1902, 40,84.
- 4. Lösner, H. J. Prakt. Chem. 1895, *50* , 563.

### COMPONENTS: ORIGINAL MEASUREMENTS: 1. N, N-Dimethylmethanamine Gerrard, W. (trimethylamine); C3H9N; [75-50-3]Solubility of Gases and Liquids, 2. 1-Methyl-2-nitrobenzene Plenum 1976, Chapter 10. (o-nitrotoluene); C<sub>7</sub>H<sub>7</sub>NO<sub>2</sub>; [88-72-2] VARIABLES: PREPARED BY: C. L. Young Temperature, pressure

EXPERIMENTAL	. VALUES:		Mole fraction of trimethylamine in liquid,
т/к	P/mmHg	P/10 <sup>5</sup> Pa	x (CH <sub>3</sub> ) 3N
278.15	100	0.133	0.071
	200	0.267	0.146
	300	0.400	0.238
	400	0.533	0.351
	500	0.667	0.482
	600	0.800	0.647
	700	0.933	0.828
	760	1.013	0.920
283.15	100	0.133	0.064
	200	0.267	0.132
	300	0.400	0.202
	400	0.533	0.284
	500	0.667	0.380
	600	0.800	0.486
	700	0.933	0.605
	760	1.013	0.676
293.15	760	1.013	0.406
298.15	100	0.133	0.040
	200	0.267	0.080
	300	0.400	0.118
	400	0.533	0.160
	500	0.667	0.204
	600	0.800	0.250
	700	0.933	0.301
	760	1.013	0.331

### AUXILIARY INFORMATION

### METHOD/APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

# SOURCE AND PURITY OF MATERIALS:

- 1. British Drug Houses or Cambrian Gases sample.
- 2. Purified and attested by conventional procedures.

# ESTIMATED ERROR:

 $\delta T/K = \pm 0.1; \quad \delta x/x = \pm 3$ %

(estimated by compiler)

- Gerrard, W.
   Appl. Chem. Biotechnol. 1972, 22 623-650.
- 2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

18		77,77-0111101119	methanamine
<pre>COMPONENTS:  1. N,N-Dimethylmethanamine,    (trimethylamine); C<sub>3</sub>H<sub>9</sub>N;    [75-50-3]</pre>			ORIGINAL MEASUREMENTS:  Gerrard, W.  Solubility of Gases and Liquids,
2. Benzen C <sub>7</sub> H <sub>9</sub> N;	emethanamine, [100-46-9]	(Benzylamine);	Plenum, <u>1976</u> , Chapter 10.
VARIABLES:			PREPARED BY:
Pressure			C. L. Young
EXPERIMENTAL	. VALUES:		
T/K	P/mmHg	<i>P</i> /10 <sup>5</sup> Pa	Mole fraction of trimethylamine in liquid,  "(CH3)3N
283.15	100 200 300 400 500 600 700 760	0.133 0.267 0.400 0.533 0.667 0.800 0.933 1.013	0.060 0.128 0.203 0.284 0.380 0.492 0.640 0.732
		AUXILIARY	INFORMATION
METHOD/APPAR	ATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:
of pure li		known weight oler tube at a by a manometer	l. British Drug Houses or Cambrian Gases sample.

assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

2. Purified and attested by conventional procedures.

# ESTIMATED ERROR:

 $\delta T/K = \pm 0.1; \quad \delta x/x = \pm 3$ % (estimated by compiler)

- 1. Gerrard, W. J. Appl. Chem. Biotechnol. 1972, 22 623-650.
- 2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

- N,N-Dimethylmethanamine (trimethylamine); C<sub>3</sub>H<sub>9</sub>N; [75-50-3]
- N-Ethylbenzenamine (N-ethylaniline); C<sub>8</sub>H<sub>11</sub>N; [103-69-5]

### ORIGINAL MEASUREMENTS:

Gerrard, W.

Solubility of Gases and Liquids,

Plenum 1976, Chapter 10.

### VARIABLES:

Pressure

### PREPARED BY:

C. L. Young

### EXPERIMENTAL VALUES:

T/K	P/mmHg	<i>P/</i> 10 <sup>5</sup> Pa	Mole fraction of trimethylamine in liquid,  **(CH3)3N
283.15	100	0.133	0.124
	200	0.267	0.233
	300	0.400	0.335
	400	0.533	0.432
	500	0.667	0.526
	600	0.800	0.612
	700	0.933	0.712
	760	1.013	0.771

# AUXILIARY INFORMATION

### METHOD/APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

### SOURCE AND PURITY OF MATERIALS:

- 1. British Drug Houses or Cambrian Gases sample.
- 2. Purified and attested by conventional procedures.

### ESTIMATED ERROR:

 $\delta T/K = \pm 0.1;$   $\delta x/x = \pm 3%$  (estimated by compiler)

- 1. Gerrard, W.
- J. Appl. Chem. Biotechnol. 1972, 22 623-650.
- 2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

COMPONENTS: ORIGINAL	<del>,</del>	
	MEASUREMENTS:	
1. N, N-Dimethylmethanamine, Gerrar (trimethylamine); C <sub>3</sub> H <sub>9</sub> N;	ed, W.	
[75-50-3] Solubi	Solubility of Gases and Liquids, Plenum 1976, Chapter 10.	
2. 1-Octanamine (octylamine); C <sub>8</sub> H <sub>19</sub> N; [111-86-4]  Plenum		
VARIABLES: PREPARED	BY:	
Temperature, pressure	C. L. Young	
EXPERIMENTAL VALUES: Mole	Mole fraction of trimethylamine	
T/K P/mmHg P/10 <sup>5</sup> Pa	in liquid, <sup>x</sup> (CH <sub>3</sub> ) <sub>3</sub> N	
278.15 100 0.133	0.141	
200 0.267	0.265	
300 0.400	0.387	
400 0.533 500 0.667	0.507 0.628	
600 0.800	0.750	
700 0.933	0.866	
760 1.013	0.930	
283.15 100 0.133	0.106	
200 0.267	0.213	
300 0.400 400 0.533	0.317 0.418	
500 0.667	0.516	
600 0.800	0.617	
700 0.933	0.717	
760 1.013	0.776	
293.15 760 1.013 298.15 100 0.133	0.585 0.075	
200 0.267	0.141	
300 0.400	0.210	
400 0.533	0.277	
500 0.667 600 0.800	0.340 0.400	
700 0.933	0.463	
760 1.013	0.500	
AUXILIARY INFORMATIO	ON .	
	D PURITY OF MATERIALS:	
Amine was passed into a known weight   1. Bri of pure liquid in a bubbler tube at a   Gases s	tish Drug Houses or Cambrian ample.	
total pressure measured by a manometer	isi.aaa b	
	rified and attested by cional procedures.	
temperature was manually controlled	Toliar procedures.	
to within 0.2K.		
The apparatus and procedure are		
described by Gerrard [1,2].		
ESTIMATED	ERROR:	
δT/K =	$\pm 0.1;  \delta x/x = \pm 3\%$	
	ated by compiler)	
	-	
REFERENCE		
	rard, W. . Chem. Biotechnol. <u>1972</u> , 22	
Solubil	rard, W. ity of Gases and Liquids. Press, New York. <u>1976</u> .	
Chapter		

### COMPONENTS: ORIGINAL MEASUREMENTS: 1. N, N-Dimethylmethanamine Gerrard, W. (trimethylamine); C3H9N; [75-50-3]Solubility of Gases and Liquids, 2. N, N-Dimethylbenzenamine Plenum 1976, Chapter 10. (N,N-dimethylaniline); C8H11N; [121-69-7]VARIABLES: PREPARED BY: Pressure C. L. Young EXPERIMENTAL VALUES:

T/K	P/mmHg	P/10 <sup>5</sup> Pa	Mole fraction of trimethylamine in liquid,   **(CH3)3N
283.15	100	0.133	0.071
	200	0.267	0.149
	300	0.400	0.235
	400	0.533	0.328
	500	0.667	0.422
	600	0.800	0.535
	700	0.933	0.660
	760	1.013	0.744

### AUXILIARY INFORMATION ...

### METHOD/APPARATUS/PROCEDURE:

Amine was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K.

The apparatus and procedure are described by Gerrard [1,2].

### SOURCE AND PURITY OF MATERIALS:

- 1. British Drug Houses or Cambrian Gases sample.
- 2. Purified and attested by conventional procedures.

# ESTIMATED ERROR:

 $\delta T/K = \pm 0.1;$   $\delta x/x = \pm 3%$  (estimated by compiler)

- Gerrard, W.
   Appl. Chem. Biotechnol. <u>1972</u>, 22 623-650.
- 2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.

OMBONENTE			ylmethanamine ORIGINAL MEASUREMENTS:	
<pre>COMPONENTS: 1. N,N-Methylmethanamine   (trimethylamine); C<sub>3</sub>H<sub>9</sub>N;   [75-50-3] 2. N,N-Diethylbenzenamine   (N,N-diethylaniline); C<sub>10</sub>H<sub>15</sub>N;   [91-66-7]</pre>				
			Gerrard, W.  Solubility of Gases and Liquids,	
			Plenum 1976, Chapter 10.	
VARIABLES:			PREPARED BY:	
Pressure			C. L. Young	
EXPERIMENTAL	VALUES:			
			Mole fraction of trimethylamine in liquid,	
T/K	P/mmHg	<i>P</i> /10 <sup>5</sup> Pa	x (CH <sub>3</sub> ) <sub>3</sub> N	
283.15	100	0.133	0.083	
	200 300	0.267 0.400	0.165 0.255	
	400	0.533	0.352	
	500	0.667	0.454 0.560	
	600 700	0.800 0.933	0.673	
	760	1.013	0.750	
		AUXI LI AR	Y INFORMATION	
	ATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
	quid in a bub	known weight bler tube at a by a manomete		
		of absorbed	2. Purified and attested by	

# ESTIMATED ERROR:

 $\delta T/K = \pm 0.1; \quad \delta x/x = \pm 3\%$ 

(estimated by compiler)

- REFERENCES:
  1. Gerrard, W.
  J. Appl. Chem. Biotechnol. 1972, 22 623-650.

2. Gerrard, W. Solubility of Gases and Liquids. Plenum Press, New York. 1976. Chapter 1.